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ED Entered STN: 14 Dec 1985
TI Metal coating of piezoceramic pieces
IN Januschkowetz, Herbert; Laub, Hans
PA Siemens A.-G. , Fed. Rep. Ger.
SO Ger. Offen., 14 pp.

CODEN: GWXXBX
DT Patent
LA German
IC ICM H01L041-22
ICS C23C020-04
CC 57-2 (Ceramics)

Section cross-reference(s): 56, 76

FAN.CNT 1

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PI	DE 3402494	A1	19850725	DE 1984-3402494	19840125
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	EP 150363	A2	19850807	EP 1984-115064	19841210
	EP 150363	A3	19850828		
	R: CH, DE, GB, LI, NL, SE				
FPRAI	DE 1984-3402494	A	19840125		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 3402494	ICM	H01L041-22
	ICS	C23C020-04

AB Small, hollow, thin-walled piezoelec. ceramic tubes, e.g. Pb(Zr, Ti)O₃
are uniformly and completely metalized in large quantities by subjecting them to ultrasound in alkali metal carbonate, hydroxide, or phosphate solns.
to remove the loose minute surface particles from the mech. treated tubes prior to conventional activation and subsequent metalization. The ultrasound treatment renders the surfaces hydrophilic and permits complete removal of the undesired particles by the salt soln. without attacking the ceramic surface. The activated surfaces are electroless coated with Ni or Cu or electroless or galvanically coated with Sn, Ag, or Au. Thus, piezoelec. ceramic samples are immersed in desalted water contg. 1cm³
Pril [39394-70-2] wetting agent/L for 5 min with ultrasound irradiation from a 40 kHz-600 W source, immersed in a cleaning soln. contg. Pril 1 cm³/L, Na₂CO₃.10H₂O 30 g/L, and Na₃PO₄.12H₂O 20 g/L for 5 min under ultrasound
as above, activated in solns. contg. SnCl₂ 40 g/L, HCl 80 cm³/L, and HCHO 25 cm³/L and PdCl₂ 0.2 g/L and HCl 5 cm³/L for 3 and 1.5 min, resp., accelerated in a soln. contg. NaH₂PO₂.H₂O 100, succinic acid [110-15-6] 60, and (NH₄)₂SO₄ 40 g/L, activated again in both chloride solns., and coated 15-20 min in a 90.degree. bath contg. NiSO₄.7H₂O 35, succinic acid

60, (NH₄)SO₄ 40, 2-hydroxy-4-methylbenzoic acid 6, and NaH₂PO₄·H₂O 20 g/L at pH 7.5 and at a coating rate of 15 .mu./h to give smooth, uniform 3-5.mu. Ni coatings with good adhesion.

ST piezoelec ceramic metalization; lead titanate zirconate metalization; nickel coating piezoelec ceramic; gold coating piezoelec ceramic; silver coating piezoelec ceramic; copper coating piezoelec ceramic; tin coating piezoelec ceramic

IT Sound and Ultrasound, chemical and physical effects
(in surface purifn., of piezoelec. ceramics by alkali metal salts, for metalization)

IT Piezoelectric substances
(lead titanate zirconate ceramics, metalization of, surface prepn. for,
by alkali metal salts and ultrasound)

IT 12060-00-3D, solid solns. with lead zirconate 12060-01-4D, solid solns. with lead titanate
RL: USES (Uses)
(ceramics, metalization of piezoelec., surface purifn. for, by alkali metal salts and ultrasound)

IT 7440-02-0P, uses and miscellaneous 7440-22-4P, uses and miscellaneous
7440-31-5P, uses and miscellaneous 7440-50-8P, uses and miscellaneous
7440-57-5P, uses and miscellaneous
RL: PREP (Preparation); USES (Uses)
(coating of, on piezoelec. ceramics, with surface purifn. by alkali metal salts and ultrasound)

IT 110-15-6, uses and miscellaneous
RL: USES (Uses)
(in metalization, of piezoelec. ceramics)

IT 7601-54-9
RL: USES (Uses)
(surface purifn. by, of piezoelec. ceramics, with ultrasound, for metalization)

IT 497-19-8, properties
RL: PRP (Properties)
(surface purifn. by, of piezoelec. ceramics, with ultrasound, for metalization)

IT 39394-70-2
RL: USES (Uses)
(wetting agent, in metalization of piezoelec. ceramics)

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